

0590  
05-28 #3

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## RAW SEQUENCE LISTING

DATE: 06/03/2002

PATENT APPLICATION: US/10/083,336A

TIME: 13:15:11

Input Set : A:\P67452US0 sub seq 05-17-02.txt

Output Set : N:\CRF3\06032002\J083336A.raw

3 <110> APPLICANT: Olson, Mark A  
 4 Millard, Charles B  
 5 Byrne, Michael P  
 6 Wannemacher, Robert W  
 8 <120> TITLE OF INVENTION: Ricin Vaccine and Methods of Making and Using Thereof  
 10 <130> FILE REFERENCE: P67452US0 (RIID 01-58)  
 12 <140> CURRENT APPLICATION NUMBER: 10/083,336A  
 C--> 13 <141> CURRENT FILING DATE: 2002-05-21  
 15 <160> NUMBER OF SEQ ID NOS: 15  
 17 <170> SOFTWARE: PatentIn Ver. 2.1  
 19 <210> SEQ ID NO: 1  
 20 <211> LENGTH: 576  
 21 <212> TYPE: PRT  
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 29 20 25 30  
 31 Asp Asn Asn Ile Phe Pro Lys Gln Tyr Pro Ile Ile Asn Phe Thr Thr  
 32 35 40 45  
 34 Ala Gly Ala Thr Val Gln Ser Tyr Thr Asn Phe Ile Arg Ala Val Arg  
 35 50 55 60  
 37 Gly Arg Leu Thr Thr Gly Ala Asp Val Arg His Glu Ile Pro Val Leu  
 38 65 70 75 80  
 40 Pro Asn Arg Val Gly Leu Pro Ile Asn Gln Arg Phe Ile Leu Val Glu  
 41 85 90 95  
 43 Leu Ser Asn His Ala Glu Leu Ser Val Thr Leu Ala Leu Asp Val Thr  
 44 100 105 110  
 46 Asn Ala Tyr Val Val Gly Tyr Arg Ala Gly Asn Ser Ala Tyr Phe Phe  
 47 115 120 125  
 49 His Pro Asp Asn Gln Glu Asp Ala Glu Ala Ile Thr His Leu Phe Thr  
 50 130 135 140  
 52 Asp Val Gln Asn Arg Tyr Thr Phe Ala Phe Gly Gly Asn Tyr Asp Arg  
 53 145 150 155 160  
 55 Leu Glu Gln Leu Ala Gly Asn Leu Arg Glu Asn Ile Glu Leu Gly Asn  
 56 165 170 175  
 58 Gly Pro Leu Glu Glu Ala Ile Ser Ala Leu Tyr Tyr Tyr Ser Thr Gly  
 59 180 185 190  
 61 Gly Thr Gln Leu Pro Thr Leu Ala Arg Ser Phe Ile Ile Cys Ile Gln  
 62 195 200 205  
 64 Met Ile Ser Glu Ala Ala Arg Phe Gln Tyr Ile Glu Gly Glu Met Arg  
 65 210 215 220

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67 Thr Arg Ile Arg Tyr Asn Arg Arg Ser Ala Pro Asp Pro Ser Val Ile
68 225                230                235                240
70 Thr Leu Glu Asn Ser Trp Gly Arg Leu Ser Thr Ala Ile Gln Glu Ser
71                245                250                255
73 Asn Gln Gly Ala Phe Ala Ser Pro Ile Gln Leu Gln Arg Arg Asn Gly
74                260                265                270
76 Ser Lys Phe Ser Val Tyr Asp Val Ser Ile Leu Ile Pro Ile Ile Ala
77                275                280                285
79 Leu Met Val Tyr Arg Cys Ala Pro Pro Pro Ser Ser Gln Phe Ser Leu
80                290                295                300
82 Leu Ile Arg Pro Val Val Pro Asn Phe Asn Ala Asp Val Cys Met Asp
83 305                310                315                320
85 Pro Glu Pro Ile Val Arg Ile Val Gly Arg Asn Gly Leu Cys Val Asp
86                325                330                335
88 Val Arg Asp Gly Arg Phe His Asn Gly Asn Ala Ile Gln Leu Trp Pro
89                340                345                350
91 Cys Lys Ser Asn Thr Asp Ala Asn Gln Leu Trp Thr Leu Lys Arg Asp
92                355                360                365
94 Asn Thr Ile Arg Ser Asn Gly Lys Cys Leu Thr Thr Tyr Gly Tyr Ser
95                370                375                380
97 Pro Gly Val Tyr Val Met Ile Tyr Asp Cys Asn Thr Ala Ala Thr Asp
98 385                390                395                400
100 Ala Thr Arg Trp Gln Ile Trp Asp Asn Gly Thr Ile Ile Asn Pro Arg
101                405                410                415
103 Ser Ser Leu Val Leu Ala Ala Thr Ser Gly Asn Ser Gly Thr Thr Leu
104                420                425                430
106 Thr Val Gln Thr Asn Ile Tyr Ala Val Ser Gln Gly Trp Leu Pro Thr
107                435                440                445
109 Asn Asn Thr Gln Pro Phe Val Thr Thr Ile Val Gly Leu Tyr Gly Leu
110                450                455                460
112 Cys Leu Gln Ala Asn Ser Gly Gln Val Trp Ile Glu Asp Cys Ser Ser
113 465                470                475                480
115 Glu Lys Ala Glu Gln Gln Trp Ala Leu Tyr Ala Asp Gly Ser Ile Arg
116                485                490                495
118 Pro Gln Gln Asn Arg Asp Asn Cys Leu Thr Ser Asp Ser Asn Ile Arg
119                500                505                510
121 Glu Thr Val Val Lys Ile Leu Ser Cys Gly Pro Ala Ser Ser Gly Gln
122                515                520                525
124 Arg Trp Met Phe Lys Asn Asp Gly Thr Ile Leu Asn Leu Tyr Ser Gly
125                530                535                540
127 Leu Val Leu Asp Val Arg Ala Ser Asp Pro Ser Leu Lys Gln Ile Ile
128 545                550                555                560
130 Leu Tyr Pro Leu His Gly Asp Pro Asn Gln Ile Trp Leu Pro Leu Phe
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138 <211> LENGTH: 179
139 <212> TYPE: PRT
140 <213> ORGANISM: Ricinus communis
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143 Met Lys Pro Gly Gly Asn Thr Ile Val Ile Trp Met Tyr Ala Val Ala
144   1           5           10           15
146 Thr Trp Leu Cys Phe Gly Ser Thr Ser Gly Trp Ser Phe Thr Leu Glu
147           20           25           30
149 Asp Asn Asn Ile Phe Pro Lys Gln Tyr Pro Ile Ile Asn Phe Thr Thr
150           35           40           45
152 Ala Gly Ala Thr Val Gln Ser Tyr Thr Asn Phe Ile Arg Ala Val Arg
153           50           55           60
155 Gly Arg Leu Thr Thr Gly Ala Asp Val Arg His Glu Ile Pro Val Leu
156   65           70           75           80
158 Pro Asn Arg Val Gly Leu Pro Ile Asn Gln Arg Phe Ile Leu Val Glu
159           85           90           95
161 Leu Ser Asn His Ala Glu Leu Ser Val Thr Leu Ala Leu Asp Val Thr
162           100          105          110
164 Asn Ala Tyr Val Val Gly Tyr Arg Ala Gly Asn Ser Ala Tyr Phe Phe
165           115          120          125
167 His Pro Asp Asn Gln Glu Asp Ala Glu Ala Ile Thr His Leu Phe Thr
168           130          135          140
170 Asp Val Gln Asn Arg Tyr Thr Phe Ala Phe Gly Gly Asn Tyr Asp Arg
171 145           150          155          160
173 Leu Glu Gln Leu Ala Gly Asn Leu Arg Glu Asn Ile Glu Leu Gly Asn
174           165          170          175
176 Gly Pro Leu
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181 <211> LENGTH: 198
182 <212> TYPE: PRT
183 <213> ORGANISM: Ricinus communis
185 <400> SEQUENCE: 3
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187   1           5           10           15
189 Thr Val Gln Ser Tyr Thr Asn Phe Ile Arg Ala Val Arg Gly Arg Leu
190           20           25           30
192 Thr Thr Gly Ala Asp Val Arg His Glu Ile Pro Val Leu Pro Asn Arg
193           35           40           45
195 Val Gly Leu Pro Ile Asn Gln Arg Phe Ile Leu Val Glu Leu Ser Asn
196           50           55           60
198 His Ala Glu Leu Ser Val Thr Leu Ala Leu Asp Val Thr Asn Ala Tyr
199   65           70           75           80
201 Val Val Gly Tyr Arg Ala Gly Asn Ser Ala Tyr Phe Phe His Pro Asp
202           85           90           95
204 Asn Gln Glu Asp Ala Glu Ala Ile Thr His Leu Phe Thr Asp Val Gln
205           100          105          110
207 Asn Arg Tyr Thr Phe Ala Phe Gly Gly Asn Tyr Asp Arg Leu Glu Gln
208           115          120          125
210 Leu Ala Gly Asn Leu Arg Glu Asn Ile Glu Leu Gly Asn Gly Pro Leu
211           130          135          140
213 Glu Glu Ala Ile Ser Ala Leu Tyr Tyr Tyr Ser Thr Gly Gly Thr Gln
214 145           150          155          160
216 Leu Pro Thr Leu Ala Arg Ser Phe Ile Ile Cys Ile Gln Met Ile Ser

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217          165          170          175
219 Glu Ala Ala Arg Phe Gln Tyr Ile Glu Gly Glu Met Arg Thr Arg Ile
220          180          185          190
222 Arg Tyr Asn Arg Arg Ser
223          195
226 <210> SEQ ID NO: 4
227 <211> LENGTH: 188
228 <212> TYPE: PRT
229 <213> ORGANISM: Ricinus communis
231 <400> SEQUENCE: 4
232 Ile Phe Pro Lys Gln Tyr Pro Ile Ile Asn Phe Thr Thr Ala Gly Ala
233   1          5          10          15
235 Thr Val Gln Ser Tyr Thr Asn Phe Ile Arg Ala Val Arg Gly Arg Leu
236          20          25          30
238 Thr Val Leu Pro Asn Arg Val Gly Leu Pro Ile Asn Gln Arg Phe Ile
239          35          40          45
241 Leu Val Glu Leu Ser Asn His Ala Glu Leu Ser Val Thr Leu Ala Leu
242          50          55          60
244 Asp Val Thr Asn Ala Tyr Val Val Gly Tyr Arg Ala Gly Asn Ser Ala
245   65          70          75          80
247 Tyr Phe Phe His Pro Asp Asn Gln Glu Asp Ala Glu Ala Ile Thr His
248          85          90          95
250 Leu Phe Thr Asp Val Gln Asn Arg Tyr Thr Phe Ala Phe Gly Gly Asn
251          100          105          110
253 Tyr Asp Arg Leu Glu Gln Leu Ala Gly Asn Leu Arg Glu Asn Ile Glu
254          115          120          125
256 Leu Gly Asn Gly Pro Leu Glu Glu Ala Ile Ser Ala Leu Tyr Tyr Tyr
257          130          135          140
259 Ser Thr Gly Gly Thr Gln Leu Pro Thr Leu Ala Arg Ser Phe Ile Ile
260 145          150          155          160
262 Cys Ile Gln Met Ile Ser Glu Ala Ala Arg Phe Gln Tyr Ile Glu Gly
263          165          170          175
265 Glu Met Arg Thr Arg Ile Arg Tyr Asn Arg Arg Ser
266          180          185
269 <210> SEQ ID NO: 5
270 <211> LENGTH: 199
271 <212> TYPE: PRT
272 <213> ORGANISM: Ricinus communis
274 <400> SEQUENCE: 5
275 Met Ile Phe Pro Lys Gln Tyr Pro Ile Ile Asn Phe Thr Thr Ala Gly
276   1          5          10          15
278 Ala Thr Val Gln Ser Tyr Thr Asn Phe Ile Arg Ala Val Arg Gly Arg
279          20          25          30
281 Leu Thr Thr Gly Ala Asp Val Arg His Glu Ile Pro Val Leu Pro Asn
282          35          40          45
284 Arg Val Gly Leu Pro Ile Asn Gln Arg Phe Ile Leu Val Glu Leu Ser
285          50          55          60
287 Asn His Ala Glu Leu Ser Val Thr Leu Ala Leu Asp Val Thr Asn Ala
288   65          70          75          80

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Input Set : A:\P67452US0 sub seq 05-17-02.txt

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290 Tyr Val Val Gly Tyr Arg Ala Gly Asn Ser Ala Tyr Phe Phe His Pro
291      85      90      95
293 Asp Asn Gln Glu Asp Ala Glu Ala Ile Thr His Leu Phe Thr Asp Val
294      100      105      110
296 Gln Asn Arg Tyr Thr Phe Ala Phe Gly Gly Asn Tyr Asp Arg Leu Glu
297      115      120      125
299 Gln Leu Ala Gly Asn Leu Arg Glu Asn Ile Glu Leu Gly Asn Gly Pro
300      130      135      140
302 Leu Glu Glu Ala Ile Ser Ala Leu Tyr Tyr Tyr Ser Thr Gly Gly Thr
303 145      150      155      160
305 Gln Leu Pro Thr Leu Ala Arg Ser Phe Ile Ile Cys Ile Gln Met Ile
306      165      170      175
308 Ser Glu Ala Ala Arg Phe Gln Tyr Ile Glu Gly Glu Met Arg Thr Arg
309      180      185      190
311 Ile Arg Tyr Asn Arg Arg Ser
312      195
315 <210> SEQ ID NO: 6
316 <211> LENGTH: 189
317 <212> TYPE: PRT
318 <213> ORGANISM: Ricinus communis
320 <400> SEQUENCE: 6
321 Met Ile Phe Pro Lys Gln Tyr Pro Ile Ile Asn Phe Thr Thr Ala Gly
322 1      5      10      15
324 Ala Thr Val Gln Ser Tyr Thr Asn Phe Ile Arg Ala Val Arg Gly Arg
325      20      25      30
327 Leu Thr Val Leu Pro Asn Arg Val Gly Leu Pro Ile Asn Gln Arg Phe
328      35      40      45
330 Ile Leu Val Glu Leu Ser Asn His Ala Glu Leu Ser Val Thr Leu Ala
331      50      55      60
333 Leu Asp Val Thr Asn Ala Tyr Val Val Gly Tyr Arg Ala Gly Asn Ser
334 65      70      75      80
336 Ala Tyr Phe Phe His Pro Asp Asn Gln Glu Asp Ala Glu Ala Ile Thr
337      85      90      95
339 His Leu Phe Thr Asp Val Gln Asn Arg Tyr Thr Phe Ala Phe Gly Gly
340      100      105      110
342 Asn Tyr Asp Arg Leu Glu Gln Leu Ala Gly Asn Leu Arg Glu Asn Ile
343      115      120      125
345 Glu Leu Gly Asn Gly Pro Leu Glu Glu Ala Ile Ser Ala Leu Tyr Tyr
346      130      135      140
348 Tyr Ser Thr Gly Gly Thr Gln Leu Pro Thr Leu Ala Arg Ser Phe Ile
349 145      150      155      160
351 Ile Cys Ile Gln Met Ile Ser Glu Ala Ala Arg Phe Gln Tyr Ile Glu
352      165      170      175
354 Gly Glu Met Arg Thr Arg Ile Arg Tyr Asn Arg Arg Ser
355      180      185
358 <210> SEQ ID NO: 7
359 <211> LENGTH: 198
360 <212> TYPE: PRT
361 <213> ORGANISM: Ricinus communis

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VERIFICATION SUMMARY

PATENT APPLICATION: US/10/083,336A

DATE: 06/03/2002

TIME: 13:15:12

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